

undulate along the margins, caudate-acuminate at the apex, deep green above, pale green with streaks and glaucous beneath; midnerve broad at the base, narrowing towards the tip; lateral nerves slender, 10-14 on each side, obliquely ascending from midnerve, continuous to form intra-marginal nerves. Peduncle solitary, 7-35 cm long, green, streaked with reddish-brown, enclosed by the petiole and then exerted. Spathe 9.5-27 cm long, green, striped with white, brown or purple inside, dull white outside, glabrous; tube 3-6 x 1.5-2 cm, cylindrical, convolute, green-and-white striped outside, dark purple striped inside, spreading at the mouth; limb 3-7 x 2.5-5 cm, ovate-lanceolate, vaulted, abruptly tapering into a long slender pendulous 5-15 cm long tail. Spadix included, cylindrical, erect, hardly exerted beyond the mouth of the tube. Pistillate spadix 4-7.5 cm long; pistillate flower-portion 0.7-1.5 cm long, dense, with a few sterile flowers above (or none) along with a few staminate flowers; pistillate flowers many, 1.5-2 x 1.7-1.8 mm; ovary 1.5-1.7 x 1.5-1.8 mm, subglobose, green, streaked; ovules 2-3, basal; style minute; stigma discoid, white, viscid. Sterile flower-portion c. 1 cm long; sterile flowers 1-3.5 mm long, subulate, bifurcate, purple at the apex. Staminate spadix 4-6.5 cm long; staminate flower-portion 1.5-2 cm long; staminate flowers many, sparse; filament 0.1-0.5 mm long; anthers 1-5, 2-lobed, purplish brown, dehiscing by a pore; lobes 0.4-0.7 x 0.5-0.9 mm, globose or depressed-subglobose; connective beaked. Appendix 2.5-4.5 x 0.5-0.9 cm, cylindrical or slightly

compressed, light green, streaked with purple, swollen at the base, contracted in the middle, rugose or echinate with white bristle, 0.07-0.2 cm long, round margins crenate at the apex. Appendix of staminate spadix distinctly stipitate; stipe c. 0.5 cm long. Berries c. 0.6 cm long.

Fl. & Fr.: Feb.-July.

Note: Easily distinguished by its densely echinate spadix-appendix apex. Commonly called the spiny cobra-lily (Pradhan *l.c.*). Berries of *Arisaema* spp. are bird-dispersed (Ridley 1930). This species may have been dispersed by birds internally.

Specimen examined: Kerala: Palakkad district, Silent Valley R.F., 900 m, 22.iv.1980, *V.J. Nair* 67259 (CAL, MH). Manipur: Mao, 6,500 ft (1975.25 m), 11.ii.1954, *S.C. Sinha* 1873 (CAL). Meghalaya: Khasia hills, Dumpep, 30.v.1911, *H. Burkill & S.C. Banerjee* 34249 (CAL). Sikkim: North district, Tallam Samolong, 25.vii.1986, *D.C.S. Raju & S. Singh* 6124 (SHC).

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REFERENCE

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37. TWO NEW ADDITIONS TO THE SEDGES, FAMILY CYPERACEAE, OF ANDHRA PRADESH

(With one text-figure)

During an exploration on aquatic and the authors encountered two interesting taxa wetland angiosperm diversity in Andhra Pradesh, which, on critical examination, were identified

Mariscus sumatrensis (Retz.) Raynal is akin to *M. paniceus* (Rottb.) Vahl, but it can be distinguished by the following characters:

***Mariscus paniceus* (Rottb.) Vahl**

Plants not stoloniferous.

Leafy bracts 3-5.

Spikes subsessile or nearly so, rays when developed up to 4 cm long.

Spikes 8-15 x 4-6 mm, densely bearing c. 150 spikelets.

Glumes ovate-lanceolate, 2.5-3 x 1.4-1.7 mm, obscurely 2-nerved on each side of the keel.

Stamens 2, rarely 3.

Achenes elliptic-long, 1.8-2.2 x 0.6-0.8 mm.

***Mariscus sumatrensis* (Retz.) Raynal**

Plants stoloniferous but subrigid.

Leafy bracts 3-10.

Spikes umbellate with elongated rays, rays 3-15, the longer ones up to 8 cm long.

Spikes 2-40 x 6-10 mm, densely bearing c. 40 spikelets.

Glumes lanceolate-oblong to ovate-oblong 3-3.5 x 1 mm, faintly multi-nerved.

Stamens 3.

Achenes linear-oblong, 1.8-2.2 x 0.5 mm.

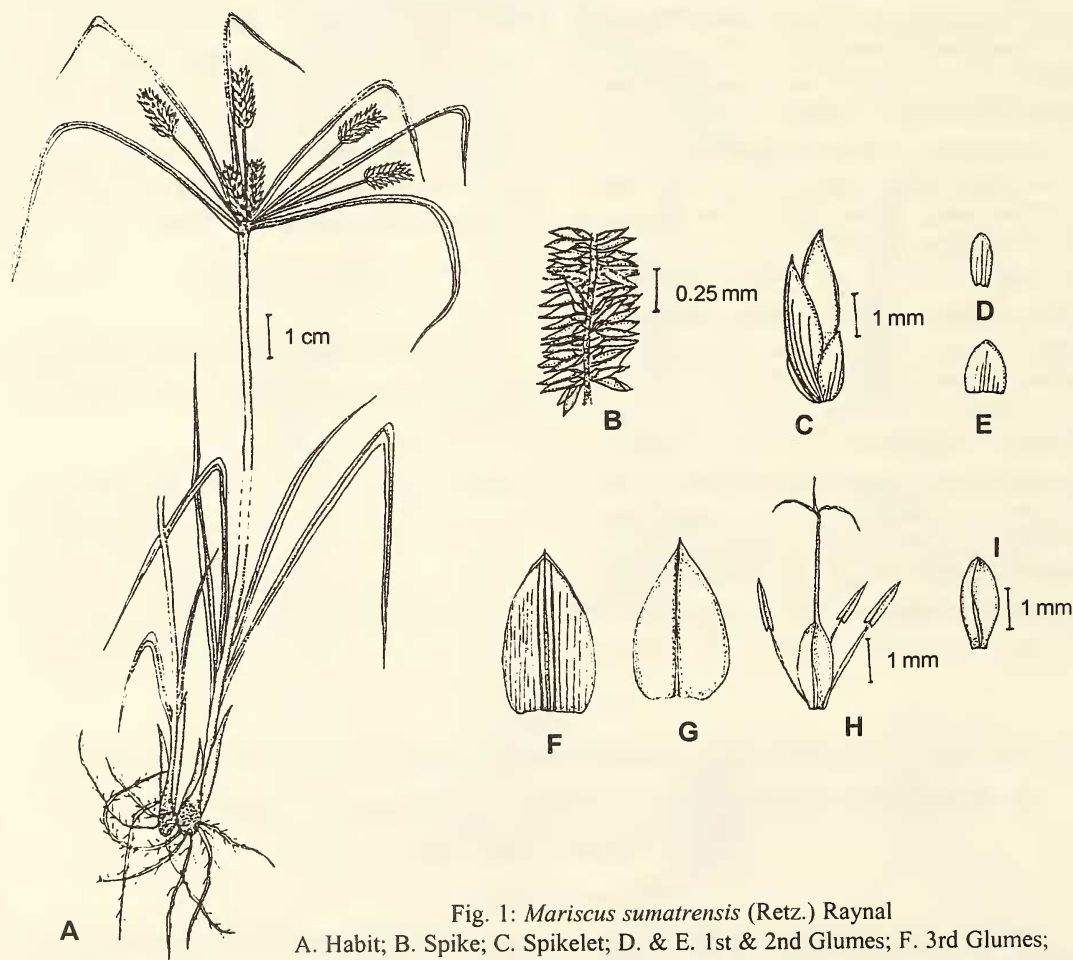


Fig. 1: *Mariscus sumatrensis* (Retz.) Raynal
 A. Habit; B. Spike; C. Spikelet; D. & E. 1st & 2nd Glumes; F. 3rd Glumes;
 G. 4th Glume; H. Pistil & Stamens; I. Nut

as *Mariscus sumatrensis* and *Kyllinga hyalina*. These two taxa have been reported from Maharashtra, Karnataka and Tamil Nadu states by earlier workers. The present report from Andhra Pradesh is, therefore, a range extension.

Intensive ecofloristic surveys were conducted in the ponds, ditches, canals, streams and waterlogged areas in the state, to collect specimens. For taxonomic study, herbarium specimens were prepared using standard methods. Collections were made to understand the influence of climatic factors on certain key characters of the taxa. The specimens were deposited in Sri Krishnadevaraya University Herbarium (SKU), Anantapur.

***Mariscus sumatrensis* (Retz.) Raynal**

Mariscus sumatrensis (Retz.) Raynal, Adansonia 15:110. 1975; T. Koyama, Gard. Bull. Singapore 30:154. 1977. *Kyllinga sumatrensis* Retz., Obs. Bot. 4:13. 1786. type sumatra wannerberg, *Mariscus sieberianus* Nees (Linnaea 9:286. 1835, *nom. nud.*) ex. Clarke in Hook. f., Fl. Brit. India. 6:122. 1893. Fig. 1.

Annual herbs. Culms up to 80 cm tall. Leaves shorter than culms, herbaceous; bracts 3-10. Inflorescence open, simple, rays 3-15. Spikes cylindrical, spikelets linear to linear-lanceolate. Glumes lanceolate-oblong to ovate oblong. Nuts linear-oblong, straw coloured.

Remarks: Rare in marshy areas along the streams.

Fl. & Fr.: August-November.

Distribution: EXTRALIMITAL: Tropical Old World, Introduced in the West Indies, Bangladesh, Sri Lanka, Nepal. INDIA: Andhra Pradesh (Cuddapah district, restricted to Lankamala waterfalls), Assam, Himachal Pradesh, Karnataka,

Maharashtra, Sikkim.

Specimens examined: Near Lankamala waterfalls, (CDP), MHR & KI 14904.

***Kyllinga hyalina* (Vahl) T. Koyama**

Kyllinga hyalina (Vahl) T. Koyama, J. Jap. Bot. 51 (10): 313. 1976. *Cyperus hyalinus* Vahl Enum. Pl. 2:239. 1806. *Pycurus pumilus* Clarke in Hook. f., Fl. Brit. India. 6:591. 1893; Fischer 1625 (1130).

Annual herbs. Culms 6-20 cm tall. Leaves shorter than, to slightly overtopping, the culms, thinly herbaceous; bracts 3-6. Inflorescence open and lax, umbelliform with elongated rays, rays 2-6. Spikelets ovate to elliptic. Glumes ovate. Nuts elliptic to broadly elliptic, brown.

Remarks: Sporadically occurring in open forests, especially during rainy season.

Fl. & Fr.: August-November.

Distribution: EXTRALIMITAL: Tropical East Africa, Massacres Is., Indochina, Malesia and Northern Australia.

INDIA: Andhra Pradesh (Cuddapah), Karnataka, Maharashtra, Tamil Nadu.

Specimens examined: Lankamalleswaram east (CDP), SRS & KI 13152.

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38. FOOD VALUE OF SOME EDIBLE FERNS FROM DHARAN, SOUTHEASTERN NEPAL

Within the next three decades, the world will have to double its food production to meet the demand of its increasing population (Myers 1999) and meet the health requirements of